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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/787,997	03/23/2001	Wen Xu	P01,0052	1200
29177	7590	04/20/2004	EXAMINER	
BELL, BOYD & LLOYD, LLC			HA, DAC V	
P. O. BOX 1135			ART UNIT	
CHICAGO, IL 60690-1135			PAPER NUMBER	
			2634	8

DATE MAILED: 04/20/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/787,997

Applicant(s)

XU, WEN

Examiner

Dac V. Ha

Art Unit

2634

— The MAILING DATE of this communication appears on the cover sheet with the correspondence address —

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 23 March 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 11-22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 11-13 and 15-22 is/are rejected.
- 7) ☒ Claim(s) 14 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

**DETAILED ACTION**

***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. **Claims 11-13, 15-22** are rejected under 35 U.S.C. 103(a) as being unpatentable over Van Den Berghe et al. (US 6,233,713) (hereinafter Van) in view of Hauck. (US 4,626,829).

**Regarding claim 11**, Van teaches the claimed subject matter "A method ... in said mapping" "and allocating ... symbols" collectively in Col. 2, lines 4-25; Col. 5, line 1 to Col. 6, line 8. That is, Van teaches that the information bits have varying sensitivity to error, thus grouped into classes and encoded into codeword therefrom, as conventional. Van differs from the claimed invention in that Van doesn't teach the claimed subject matter "sorting ... to obtain sorted symbols". However, the concept of coding the symbols in accordance to its probability of occurrence is not new in the art. In particular, Hauck teaches the symbols are coded in corresponding to their probability of occurrence is a technique known in the art (Col. 1, lines 29-53; Col. 15, lines 4-27). Further, Hauck teaches detecting the probability of occurrence of the symbols and coding the symbols in accordingly, Hauck essentially teaches "sorting said symbols dependent on their respective probability of occurrence". Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention to incorporate

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the teaching of coding the symbols corresponding to their probability of occurrence taught by Hauck into Van, particularly in the step of classifying, to further optimize the encoder operation.

**Regarding claim 21**, see claim 1 above.

**Regarding claim 12**, the claimed subject matter "wherein ... symbols" would have been optional to one skilled in art.

**Regarding claim 13**, the claimed subject matter "wherein ... symbols" would have been optional to one skilled in art.

**Regarding claim 15**, the claimed subject matter "producing ... source encoding" would have been obvious to one skilled in art as conventional.

**Regarding claim 16**, the claimed subject matter "comprising ... mapping" would have been obvious to one skilled in art.

**Regarding claim 17-20, 22**, Van further suggests the teaching of these the claimed subject matter in Col. 1, lines 36-53 as optional.

***Allowable Subject Matter***

3. **Claim 14** is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Conclusion***

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Cho (US 6,049,633) discloses Adaptive Arithmetic CODEC Method And Apparatus.

Gormish et al. (US 5,475,388) disclose Method And Apparatus For Using Finite State Machines To Perform Channel Modulation And Error Correction And Entropy Coding.

Fiala et al. (US 5,058,144) disclose Search Tree Data Structure Encoding For Textual Substitution Data Compression Systems.

Seshadri et al. (US 5,289,501) disclose Coded Modulation With Unequal Error Protection For Fading Channels.

Xu (US 6,348,880) discloses Method and Device for Coding, Decoding and Transmitting Information, Using Source-Controlled Channel Decoding.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dac V. Ha whose telephone number is 703-306-5536. The examiner can normally be reached on 5/4.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Chin can be reached on 703-305-4714. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should

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you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read "Dac V. Ha", with a long horizontal line extending from the end of the signature.

Dac V. Ha  
Examiner  
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